

PATENT CLAIMS

1. Firing module having a housing that can be mounted on a carrier structure so as to be rotatable in azimuth, and in which a heavy weapon is mounted so as to be pivotable in elevation about a trunnion, whereby shells are supplied to the weapon via a shell supply mechanism that operates fully automatically and that is provided with a shell transfer arm that is pivotably mounted on the trunnion and on the free end of which is disposed a shell ram provided with a loading tray and that is pivotable out of a raised position, in which the loading tray is aligned with the gun bore axis of the weapon, parallel to the plane of elevation, into a lowered position, in which the loading tray is essentially vertical, as well as a shell transporter having a shell transport arm that on its free end is provided with a gripping mechanism for grasping a respective shell that is vertically stored in a shell magazine, tip pointing upwardly, and for supplying the shell from the shell transporter, to the loading tray, in the lowered position of the shell transfer arm, characterized by the following features:

a) at least one shell magazine (4.1, 4.2) as well as the shell transporter (6) are disposed in the housing (1) in the region ahead of the trunnion (3);

5 b) the loading tray (5.1), on the shell transfer arm (5) is pivotable about a pivot axis (5.3), which in the lowered position of the shell transfer arm is essentially vertical, by at least 180° between a receiving position, which opens to the region ahead of the trunnion (3), and a delivery position, which opens to the region behind the trunnion (3);

10

c) at least one propellant charge magazine (7.1, 7.2; 17.1, 17.2; 27.1, 27.2; 37.1, 37.2) is disposed in the housing (1) in the region next to or behind the trunnion (3);

15

d) propellant charges are supplied to the weapon (W) via a propellant charge supply mechanism that is disposed in the housing (1), operates fully automatically, and is provided with a propellant charge supply tray (8.11, 8.21; 18.11, 18.21; 28.1, 28.2; 38.1, 38.2) having a propellant charge ram and pivotable into the region behind the weapon (W) and in alignment with the gun bore axis (R) of the weapon.

20

2. Firing module according to claim 1, characterized in that the propellant charge magazine (7.1, 7.2; 17.1, 17.2) is fixedly disposed on the housing and the propellant charge supply mechanism has at least one propellant charge transfer arm (8.1, 8.2) that is pivotably mounted on the trunnion (3) and on the free end of which are disposed the propellant charge supply tray (8.11, 8.21; 18.11, 18.21) and the propellant charge ram and which is pivotable out of a receiving position, in which propellant charges can be supplied to the propellant charge supply trays, parallel to the plane of elevation, into a delivery position, in which the propellant charge supply tray (8.11, 8.21; 18.11, 18.21), via a pivot arm (8.12, 8.22) in a plane perpendicular to the gun bore axis (R) of the weapon is pivotable into a position aligned with the gun bore axis (R) of the weapon.

3. Firing module according to claim 1, characterized in that the propellant charge magazine (27.1, 27.2; 37.1, 37.2) is disposed so as to be fixed to the weapon, and the propellant charge supply mechanism is provided with a propellant charge supply arm (9.1, 9.2) that is pivotable about an axis parallel to the gun bore axis (R) of the weapon (W) and on the free end of which

are disposed the propellant charge tray (28.1; 28.2; 38.1, 38.2) and the propellant charge ram, and which is pivotable out of a receiving position, in which propellant charges can be supplied to the propellant charge supply tray, in a plane perpendicular to the gun bore axis (R) of the weapon (W), into a delivery position, in which the propellant charge supply tray is aligned with the gun bore axis of the weapon.

- 5
4. Firing module according to claim 2 or 3, characterized in that the propellant charge magazines (7.1, 7.2; 17.1, 17.2; 27.1, 27.2; 37.1, 37.2) are embodied for receiving modular propellant charges, and are provided with devices for delivering a prescribed number of propellant charge modules that can be disposed one after the other in the propellant charge tray.

10

- 15
5. Firing module according to one of the claims 1 to 4, characterized in that two propellant charge magazines are present and a propellant charge supply mechanism is associated with each propellant charge magazine.

20

6. Firing module according to one of the claims 1 to 5, characterized in that the propellant charge magazine is

embodied as a compartment magazine (7.1, 7.2; 27.1, 27.2) in which the propellant charge modules are disposed one above the other in individual compartments (7.11 – 7.16) and can be cyclically delivered out of each individual compartment.

5

7. Firing module according to one of the claims 1 to 5, characterized in that the propellant charge magazine is embodied as a circulating band magazine in which the propellant charge modules are stored on individually circulating bands and can be cyclically delivered from each band.

10

8. Firing module according to one of the claims 1 to 7, characterized in that an apportioning station (27.11, 27.21) is disposed at each propellant charge magazine (27.1, 27.2) and into which the desired number of propellant charge modules are delivered from the propellant charge magazine and the propellant charge modules are transferred from the apportioning station into the propellant charge supply tray.

15

9. Firing module according to claim 8, characterized in that when using propellant charge modules that can be placed into one

20

another, the placing together of the propellant charge modules is effected in the apportioning station (27.11, 27.21).

- 5
10. Firing module according to one of the claims 1 to 9, characterized in that the shell supply mechanism as well as the propellant charge supply mechanism or mechanisms are provided with automatically controllable drive and control mechanisms that can be controlled from an operating station externally of the housing.